THE WRIGHT FLYER PAPERS

Fiscal and Operational Impacts of Standardizing US Military Resiliency Programs to Minimize Post-traumatic Stress Disorder

James E. McDonald
Lt Colonel, ANG

Air Command and Staff College
Wright Flyer Paper No. 55

Please send inquiries or comments to
Editor
The Wright Flyer Papers
Department of Research and Publications (ACSC/DER)
Air Command and Staff College
225 Chennault Circle, Bldg. 1402
Maxwell AFB AL 36112-6426
Tel: (334) 953-3558
Fax: (334) 953-2269
E-mail: acsc.der.researchorgmailbox@us.af.mil

AIR UNIVERSITY
AIR COMMAND AND STAFF COLLEGE

Fiscal and Operational Impacts of Standardizing US Military Resiliency Programs to Minimize Post-traumatic Stress Disorder

James E. McDonald
Lieutenant Colonel, ANG

Wright Flyer Paper No. 55

Air University Press
Air Force Research Institute
Maxwell Air Force Base, Alabama 36112-6026

Project Editor
Jeanne K. Shamburger

Copy Editor
Sandi Davis

Cover Art, Book Design, and Illustrations
Daniel Armstrong
Susan Fair

Composition and Prepress Production
Vivian D. O'Neal

Print Preparation and Distribution
Diane Clark

AIR FORCE RESEARCH INSTITUTE

AIR UNIVERSITY PRESS

Director and Publisher
Allen G. Peck

Editor in Chief
Oreste M. Johnson

Managing Editor
Dr. Ernest Allan Rockwell

Design and Production Manager
Cheryl King

Air University Press
155 N. Twining St., Bldg. 693
Maxwell AFB, AL 36112-6026
afri.aupress@us.af.mil

http://aupress.au.af.mil/
http://afri.au.af.mil/

Published by Air University Press in April 2016

This Wright Flyer Paper and others in the series are available electronically at the AU Press website: http://aupress.au.af.mil.

Contents

Illustrations

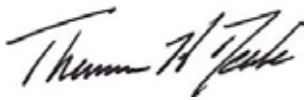
Figure

Foreword

It is my great pleasure to present another issue of the Wright Flyer Papers. Through this series, Air Command and Staff College (ACSC) presents a sampling of exemplary research produced by our residence and distance-learning students. This series has long showcased the kind of visionary thinking that drove the aspirations and activities of the earliest aviation pioneers. This year's selection of essays admirably extends that tradition. As the series title indicates, these papers aim to present cutting-edge, actionable knowledge—research that addresses some of the most complex security and defense challenges facing us today.

Recently, the Wright Flyer Papers transitioned to an exclusively electronic publication format. It is our hope that our migration from print editions to an electronic-only format will fire even greater intellectual debate among Airmen and fellow members of the profession of arms as the series reaches a growing global audience. By publishing these papers via the Air University Press website, ACSC hopes not only to reach more readers but also to support Air Force–wide efforts to conserve resources. In this spirit, we invite you to peruse past and current issues of the Wright Flyer Papers at http://aupress.maxwell.af.mil/papers_all.asp?cat=wright.

Thank you for supporting the Wright Flyer Papers and our efforts to disseminate outstanding ACSC student research for the benefit of our Air Force and war fighters everywhere. We trust that what follows will stimulate thinking, invite debate, and further encourage today's air, space, and cyber war fighters in their continuing search for innovative and improved ways to defend our nation and way of life.



THOMAS H. DEALE
Brigadier General, USAF
Commandant

About the Author

Lt Col James McDonald, Air National Guard, is currently the command and control officer for Federal Emergency Management Agency Region IX (California, Arizona, Nevada, Hawaii, Guam, Pacific Islands, and more than 150 sovereign tribal entities). He has been a police officer for the Los Angeles Police Department for the past 19 years, working with every bureau in the city. Past assignments include street patrol officer; staff positions in the Department Operations Center, Civil Rights Integrity Division, and Planning and Research Division; and training officer. Colonel McDonald deployed to Iraq in support of Operation Iraqi Freedom and served as squadron commander and staff officer in security forces, communications, and logistics. He holds a bachelor of science degree in adult education from Southern Illinois University–Carbondale and a master's degree in military operational art and science with a concentration in joint warfare from Air University, Maxwell AFB, Alabama. This paper received the Air Force Surgeon General's Award.

Preface

This study came about as a result of my deployment to Iraq in 2007. I was in charge of more than 150 Airmen at Kirkuk Regional Air Base next to a city of nearly a million people. The Iraqi police academy's campus in downtown Kirkuk had been attacked and blown up half-a-dozen times by terrorists, so the solution was to move the school about 100 meters from our main gate. Since I was in charge of all entry to and exit from the base, my Airmen and I were under constant threat while deployed. In addition, my base area was bombed, rocketed, mortared, and shot at more than 20 times during my deployment—an average of once or twice a week. This situation was further compounded by daily shootings and improvised explosive devices deployed "outside the wire," but in close proximity to us, that killed and injured hundreds of personnel, resulting in the loss of 17 US military members from my base while I was stationed there. I will never forget seeking immediate shelter, checking on the welfare of my troops at their posts during "Alarm Red," or witnessing casualties being transported to medical facilities on base.

The morning after I returned home, a neighboring farmer discharged a shotgun (I'm sure at birds or squirrels), and I awoke on my hands and knees crouched next to my bed, wondering where the nice bedspread had come from and how it had replaced the US-issue wool blanket. Six months later as I was driving through Los Angeles, a construction worker activated a jackhammer, and I swerved my vehicle in an evasive maneuver, grabbed for my (nonexistent) M-4 firearm, and for a second I *saw* the tan hood of my deployed Humvee through the front windshield. That very same day I started reading about post-traumatic stress disorder (PTSD) to find out what to expect next and to determine if I were perhaps going crazy.

Although there is a mountain of information about causes and treatment of PTSD, I was amazed that very little is in place to prepare today's warriors for what to expect, reassure them that they are not alone in their experience, and provide them with a road map to recovery. Researching my symptoms and talking about my experience with other military members, friends, and family, I worked through my issues and have even come to appreciate my journey. I have realized a personal perspective of resiliency and growth as a result of my experience. Over the past seven years, I have come to the conclusion that PTSD (or combat stress reaction) is a normal response to abnormal events.

Acknowledgments

I want to thank my thesis advisor, Dr. Gregory Intoccia, for his advice, patience, and help in the final phase of this endeavor. I am also grateful to Dr. Kate Ksobiech for bearing with me during the most painful part of this process—the research proposal phase. Her repeated rejection of every proposal I submitted forced me to reconsider my topic and bring the scope from "too broad, too broad" to narrowing my focus down to one that was attainable.

I would also like to thank my classmates and friends for their comments, edits, and suggestions. Much appreciation to my cousin for discussing this subject with me at length over pizza at his dinner table.

I am eternally grateful to the leadership in the Air Force and California Air National Guard that has given me such remarkable opportunities. You have transformed a young punk rocker who joined the military for the G.I. Bill and a pair of combat boots into someone who now looks in the mirror and thinks, "Oh, no—I *am* 'the MAN'!!!" Timing is truly everything, and I have cherished every moment.

Above all, I wish to extend the greatest amount of gratitude to a "sister-in-arms," my amazing wife. You are my rock and the best military leader I have ever known. You have been a shining example and will *always* be the "General" at home!

Abstract

For hundreds of years, adverse psychological effects of war on human beings have been recognized, and efforts have been made to heal or lessen the symptoms. Today, much of the concentrated efforts toward combat stress reaction focus on reactive medicinal and psychological treatment, yet relatively little attention has been dedicated to preemptive measures. Within the past six years, the military has implemented nearly a dozen separate programs aimed at decreasing the rates of post-traumatic stress disorder (PTSD) and suicide. The purpose of this paper is to evaluate the current resiliency training programs used by the military and to recommend improvements.

The broad conclusion is that since the US military began research for improving PTSD treatment more than 10 years ago and implemented various resiliency programs, to date there is no universal, comprehensive program content or delivery framework on either matter. Combat and tactical training are taught exclusively from resiliency training. Organizations are independently managed and operated with little or no collaboration.

A key recommendation is that standardization should occur in the following four areas: training scope, training content, training delivery, and consolidation of organizations. A comprehensive model may be adopted and integrated to standardize purpose and format. Standardized training content and delivery would ensure proven subject matter and provide more consistent evaluation and metrics. Centralized platforms for consolidation could lower administrative costs while increasing communication and oversight of best practices. Taking action to standardize and consolidate resiliency programs would result in saving lives and millions of dollars in treatment, disability, and retraining costs.

Introduction

An abnormal reaction to an abnormal situation is normal behavior.

—Victor Frankl
Man's Search for Meaning

Post-traumatic stress disorder (PTSD) is a term coined to describe symptoms that occur in the aftermath of mental trauma experienced during combat. These symptoms include recurring nightmares, flashbacks, reactions to triggers such as loud noises, and hypervigilance.[1] Military veterans who experience PTSD also are susceptible to other destructive behaviors such as self-medication—the use of drugs and/or alcohol to alleviate PTSD symptoms—which can often lead to substance abuse. Negative thoughts—another result of PTSD—can lead to irritability, depression, and suicide.[2]

Although combat stress reaction (CSR) has been recognized and labeled for hundreds of years, in the last 30 years the US military has experienced a sharp increase in reported episodes and corresponding treatment. Disability and deaths by suicide due to PTSD have seen a further dramatic rise in the past 10 years.[3] The US Army formally implemented a preventive program for PTSD in 2009, with other military branches following suit with their own versions of resiliency programs. Since that time, the Army has boasted a mild reversal of this rising trend of new PTSD cases in its personnel.[4] Implementing preventive measures such as social support, deliberately *not* avoiding hardship, adequate sleep, a nutritious diet, fitness, and other healthy coping techniques have shown to be effective in lowering the rate of long-term PTSD.[5]

To be clear, the terms *prevention* and *resilience*—when used by the psychological community in reference to CSR/PTSD—are slightly different in meaning from the more common definitions of each. *Merriam-Webster* defines *prevention* as "to stop or hinder something from happening."[6] In the context of this study, however, *prevention* translates to minimizing stress and maximizing resilience in combat situations. Prevention is a misleading substitute for resilience to PTSD and will be used in this study to refer only to proactive measures taken toward PTSD.

The medical definition of *emotional resilience* is "an ability to recover from or adjust easily to misfortune or change."[7] In the research material concerning PTSD, *resilience* is used to describe the mental state of those who experience trauma yet achieve the most complete recovery possible in the least amount of time. This term is a shortened variation of the more technically correct term *high resilience*. The military generally uses both

resilience and *resiliency* when discussing the prevention of, and positive recovery from, PTSD. When referring to training programs, military documents and articles most often use the term *resiliency training*.

Resiliency is much more common than once thought. There is evidence not only of the personality trait of "natural hardiness" but also of an individual's ability to learn to be resilient.[8] Both the military's philosophy of taking care of service members and its fiscal responsibility demand that military leadership at least consider options for minimizing mental trauma to service members while saving money on reactive treatment. Some critics question whether PTSD is preventable at all.[9] They challenge the validity of the military's research results and assert that, even if valid, the impact is negligible.[10] However, even a small reduction in PTSD equates to millions of dollars of cost savings per year. In addition, benefits such as improved morale and higher retention may be realized. While these side effects could be considered intangibles on the surface, they directly result in reduced retraining costs and increased job performance. The scope of this study is limited to measurable fiscal and operational impacts.

The concept that training could lower the occurrence of PTSD and speed recovery through resilience poses the following question: given the considerable treatment and disability costs of PTSD, how can the comparison and standardization of best practices among all military branches' existing PTSD resiliency programs result in a significant reduction in long-term costs by lowering PTSD occurrences? An analysis of the preventive programs in each branch of the military that addresses PTSD and associated symptoms through resiliency reveals a need for benchmarking and consistency of procedures. Standardization would result in a more all-inclusive program, better statistics for tracking and benchmarking, administrative cost savings, and, most likely, a significant reduction in PTSD occurrences.

Research has shown resilience to be an effective deterrent to PTSD. Standardization of resiliency programs through review and use of best practices; consolidation of administrative management and oversight; and consistent, complete implementation of services to all military branches could save the United States millions of dollars in annual treatment and disability costs. It can be argued that standardization may not be practical since military branches are not the same. For instance, ground forces (Army and Marines) have traditionally had a higher rate of PTSD than the Navy or Air Force. Specifically, based on government estimates of diagnosed PTSD and suicide, the Army's rate is approximately four times as high as that of the Air Force.[11] However, the success in other

areas where similar efforts have been integrated into a joint force concept encourages optimism regarding the expected results of standardization.

Methodology

This study reviews the current status of resiliency programs in the US military, evaluates their effectiveness, explores the possibility of standardization, makes key recommendations, and projects expected benefits. The research indicates that current treatment methods and costs are not sustainable. The study highlights the difference between activity and productivity and urges a fundamental shift in the approach toward PTSD.[12]

This research uses the evaluation methodology as its framework. First, the study assesses the military's annual baseline numbers and cost trends of treatment for PTSD. Included in the cost are average treatments per year and average payments per year in disability benefits for PTSD. This study also evaluates other less-calculable financial considerations, such as training costs not only to replace service members suffering from PTSD with new recruits but also to retrain PTSD-diagnosed service members. One benchmark used is the research results of the Army's Comprehensive Soldier Fitness Program, in place since 2009. To project possible cost savings of such a program for the total force, this study estimated the program's effect on the current rate of PTSD. It then extrapolated this success into cost savings in treatment and disability if training is standardized across the total force. The study also explores the benefits of standardizing content and delivery of training. The projected effect on lowering PTSD and related symptoms could become greater as the services identify best practices and further modify programs to incorporate benchmarks—for example, if a portion of the Navy's program generates better results than a commensurate part of the Army's program.

Other cost savings options to consider are not only consolidating existing programs across services into a centralized organization but also reducing duplication of effort within each military branch. Some branches have several programs simultaneously focusing on resilience. Also, discontinuing separate administration of resiliency programs in each branch and integrating them into a joint administrative operation would decrease overlapping positions. Besides enhancing communication and standardization of the program, joint integration would significantly lower the administrative cost of management, tracking, evaluation, and oversight versus performing these functions via separate organizational structures.

Combat Stress and Post-traumatic Stress Disorder

The battlefield is cold. It is the lonesomest place which men share together.

—S. L. A. Marshall
Men against Fire

History of Combat Stress Reaction in War

Adverse psychological effects of war on human beings have been acknowledged for hundreds of years, even as far back as medieval times.[13] Expressions such as "soldier's heart," "shell shock," "battle fatigue," and "war neurosis" are American predecessors to the current popular terms of *post-traumatic stress disorder* or *PTSD*.[14] These terms are used by doctors, psychologists, governmental agencies such as the US Department of Veterans Affairs (VA), journalists, and victims to describe the dysfunctional symptoms that significantly compromise reintegration into a full and productive life. This level of dysfunction is reportedly experienced by as many as 30 to 40 percent of military personnel who have been in a war zone.[15] Nearly 20 percent of service members who return from deployment to Iraq and Afghanistan are officially diagnosed as suffering from PTSD.[16]

As early as 1919, doctors began to more closely observe and track shell shock—a psychological condition found in World War I combat veterans.[17] After that war, the government looked at screening processes as a way to lower rates of PTSD, thinking that perhaps more "mentally healthy" service members would have better recovery from combat stress.[18] No matter how healthy warriors are to begin with, certain factors experienced in combat simply cannot be avoided. For instance, two "potent" causes of combat-related stress in those exposed to combat are fatigue and fear—whether fear for themselves, their peers, or those for whom they are responsible.[19] Neither factor can ever be removed from battlefield conditions.

The medical community has been researching long-term effects of traumatic stress for years. During the beginning stages of the Vietnam conflict, and 15 years prior to the introduction of the concept of PTSD, Herbert Archibald and Read Tuddenham were examining patients suffering long-term effects of combat-related stress. Scientific consensus following World War II focused on five diagnostic criteria. These included "(1) unusual stress; (2) previous normal personality; (3) reversibility; (4) possible progress to . . . [a] neurotic reaction; and (5) . . . persistent reaction." At the time, if the patient met the criterion of a persistent reaction, doctors used the term *combat fatigue* and regarded it as a "temporary

diagnosis to be used only until a more definite diagnosis is established."[20] As a result of their research, Archibald and Tuddenham argued that symptoms following severe traumatic stress "may persist over very long intervals" and may not be temporary but a permanent disability.[21]

Creation and Diagnosis of Post-traumatic Stress Disorder

The term *post-traumatic stress disorder* was first coined and published in 1980 by doctors hoping to legitimize pain and suffering reported by Vietnam veterans.[22] Many Soldiers, doctors, and psychologists have questioned for years whether most cases currently diagnosed as PTSD are a mental disorder at all or, rather, "a normal response to abnormal events."[23] In 2011 the second-highest-ranking Army general, Peter Chiarelli, called for changing the name of PTSD from disorder to injury.[24] Medal of Honor recipient Ty Carter recently insisted on a national news channel that "post-traumatic stress is *not* a disorder, it's not a syndrome, it's a natural reaction."[25] Eric Maisel, famed author of some 40 books, questions the very definition of the term *mental disorder* as listed in the new *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) published by the American Psychiatric Association.[26] However, in direct disagreement, Matthew Friedman, a "key leader in the psychiatric community," rejected the idea of changing the name of PTSD, stating that it could have "unintended negative consequences" because "it would confuse the issue and set up diagnostic distinctions for which there is no scientific evidence."[27] Although nearly 30 percent of individuals may experience PTSD symptoms after encountering a significant traumatic event such as combat or a terrorist attack, more than 95 percent of those exhibit either no symptoms at all in the aftermath or short-term symptoms that last six months or less.[28]

The Rising Rate of Post-traumatic Stress Disorder

In spite of the decrease in time deployed, the wars in Vietnam, Iraq, and Afghanistan have produced even higher levels of PTSD. Within two years after the start of the Iraqi War, the Defense Department identified higher rates of emotional difficulties in Soldiers who had both deployed for 12 months or more and seen extended periods of combat. In July 2005, the Department of Defense (DOD) announced that it needed to improve the ways it "prevents, identifies and treats mental illness" in service members who had deployed to Iraq or Afghanistan.[29] Figure 1 depicts the number of PTSD diagnoses in all services from 2000 through 2013.

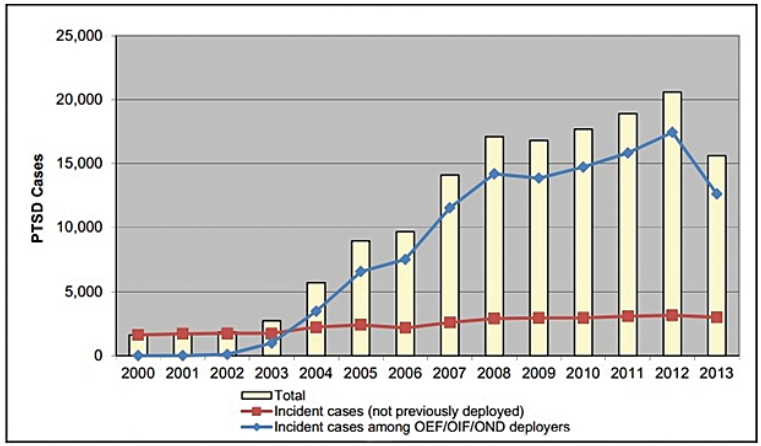


Figure 1. Annual PTSD diagnoses for all services (2000–2013). (*Reproduced from* Hannah Fischer, *A Guide to U.S. Military Casualty Statistics: Operation New Dawn, Operation Iraqi Freedom, and Operation Enduring Freedom* [Washington, DC: Congressional Research Service, 2014], 3.)

It is unknown exactly why today's military is experiencing higher rates of PTSD. On the surface, the length of deployment seemed to be a factor, but historical perspective discounts this possibility. During many earlier wars, military members would deploy until they were injured or the war ended. Today, personnel are usually deployed for one year or less. An average deployment period for the Army is one year, between nine months and a year for the Navy, nine months for the Marine Corps, and anywhere between 60 days and one year for the Air force, depending on the mission. From a logistics viewpoint, shorter deployment times equate to increased logistics requirements (airlift) and other associated costs. Increasing deployment frequency by decreasing duration diverts the focus of transporting aircraft away from where they are needed in-theater. Too much turnover of manpower results in less experienced personnel in place. As identified during Vietnam, turnover lowers unit cohesion.[30] Increasing the operations tempo of deployments requires processing more people, drastically increasing the workload of support sections such as personnel and finance. Further shortening deployment time periods is impractical.

There is speculation that the growing rate of PTSD cases has to do with today's warriors transitioning rapidly from a relatively comfortable lifestyle into the stressful military environment and combat surroundings.[31] Other possible factors include the financial reality that members and their families can profit from higher disability and death benefits,

that the military has gotten more resources to identify and treat PTSD, and that it is simply better at identifying and treating PTSD today.[32]

The Growing Cost of Treating Post-traumatic Stress Disorder

More Gulf War veterans now collect VA disability than do Vietnam War veterans. In 2010 1.14 million Gulf War veterans overtook the 1.1 million Vietnam veterans collecting disability. Vietnam disability recipients due to PTSD still outnumber Gulf War PTSD cases by 33 percent, and the $17 billion in disability payments to Vietnam veterans is 50 percent more than the $11 billion paid to Gulf War veterans.[33] Using Vietnam War veteran PTSD patients as a model, however, experts anticipate that the number of Gulf War PTSD disability recipients will likely continue to grow.[34] That growing number is also combined with the increase in cost per existing PTSD cases as disabilities worsen over time. The problem is that associated costs will continue to rise due not only to cost-of-living increases or inflation adjustments but also to the sheer number of newly affected veterans being added to the roster of existing affected veterans.

Implementation of Resiliency Training

Shift from Reactive to Proactive

Since 2009 all military branches have at least partially implemented programs aimed at preventing PTSD and suicide. Moreover, in 2011, the chairman of the Joint Chiefs of Staff (CJCS) issued an instruction delivering a "framework" for "total force fitness."[35] Nevertheless, as of 2014, there has been no apparent effort to standardize delivery of such a program. In September 2010 a resiliency workshop was held at Andrews AFB, Maryland, attended by representatives from 30 major commands, Headquarters Air Force, and sister services.[36] Although participants developed many recommendations, none have yet been implemented. Of all the military branches, including respective Guard and Reserve components, the US Army's Comprehensive Soldier and Family Fitness (CSF2) program is the most established. In 2009 the Army implemented Master Resilience Training (MRT), based on materials developed by the University of Pennsylvania and focused on prevention and resilience.[37] The Army has invested heavily in this program, with a start-up cost of $125 million and more than 900,000 of its service members trained.[38] It has also conducted the most follow-up research to measure effectiveness. To date the Army has surveyed and posted results of more than 22,000 military personnel who have undergone training.[39]

The outcome has been slightly positive, with a 1 to 2 percent margin of improvement in those units that have adopted the CSF2 program over units not yet participating. These results have been questioned as to their veracity, even by professionals who believe in the notion of human emotional resilience.[40] Still others point out that the margin of error is often 2 percent in most polls, which could explain a 1 to 2 percent change in rate. Nevertheless, it is hard to dispute the sheer numbers of those surveyed. Other outside sources document that new PTSD cases and symptoms such as depression, low morale, and suicide have been slowing in the Army. This data seems to support the CSF2 findings.

While the *DSM* details the negative aspects of exposure to "an overwhelmingly traumatic event," the concept of resiliency balances negative side effects with positive outcomes as well.[41] The US military is now looking at shifting focus from intervention to prevention and from illness to wellness.[42] To validate the effectiveness of prevention, the military must explore and prove the theory of resiliency—the idea that prepared service members can recover from combat more quickly and completely. It is not uncommon for individuals to go through trauma such as combat yet achieve an even higher level of physical and emotional fitness—a phenomenon called post-traumatic growth. Many principles that make up the rubric of post-traumatic growth were utilized in the Army's resiliency program.[43]

Existing US Military Resiliency Programs

Army. The Army's CSF2 program is the flagship of the existing military resiliency programs addressing PTSD. The Army announced that it would provide four pillars (emotional, social, physical, and spiritual) of fitness in 2008 as "comprehensive Soldier fitness," and after an investment of $125 million, that service launched the program in 2009.[44] It subsequently added family as a fifth pillar and modified the name from CSF to CSF2. Its training has been delivered through in-person and online-course platforms. The training websites and presentations are the most standardized of the programs currently available in any military branch. The Army's resiliency training has also been the most widely and uniformly distributed of any of the US military branches.

Marine Corps. The Marine Corps runs several resiliency programs simultaneously. While leadership seems to be aware of each of the programs, they do not operate jointly. The Marine Corps conducts an independent study of how Marines respond to stress in its Research, Assessment, Performance, Training Optimization, and Resilience (RAPTOR) program, which reviews present-day combat training methods and

studies lessons learned for future training operations to advise commanders of best methods observed.[45] The Behavioral Health Program centers largely on unit commanders and the Chaplain Corps.[46] The biggest component of this program is its Behavioral Health Information Network and the Marine Corps Fitness Improvement Tool (MCFIT), which assigns a coordinator to each unit commander. According to the Marine Corps commander's guide, "The coordinator for phase one of the MCFIT can be any Marine in the unit; however, a unit's Religious Ministry Team is recommended for the task. Care should be taken to avoid the coordinator being any lower than a Sergeant."[47] The Marine Corps has also recently adopted the Navy's Operational Stress Control (OSC) and modified it to become the Combat Operational Stress Control (COSC) program. Some of the more recent websites give the title as Operational Stress Control and Resiliency (OSCAR), indicating a possible upgrade in the name and content of the program. This program differs from the Marine Corps's 2007 initiative Operational Stress Control and Readiness (also OSCAR), which attempts to identify and treat problems *in* the combat zone. The more recent OSCAR focuses on resiliency while the earlier OSCAR relied heavily on prescribing antidepressant medication.[48]

Navy. The Navy's OSC program was implemented in 2009, delivering "stress training" to naval leadership in two courses: Navy OSC for Leaders (NAV-OSC Lead) and Deckplate Leader OSC (DPL-OSC). These courses are a vital part of *any* command's efforts to foster a supportive climate, whether preparing for deployment or trying to strengthen readiness and cohesion. As of March 2014, NAV-OSC Lead had been delivered to 9,000 Sailors, and DPL-OSC had been taught to 12,000 Sailors. The Navy also offers the Families OverComing under Stress (FOCUS) program, delivering resiliency training to families.[49]

Air Force. The Air Force Comprehensive Airman Fitness (CAF) program, loosely based on the Army's CSF2 program, is comprehensive in name only. Instead of being truly all-inclusive of PTSD and related symptoms, it focuses its four pillars (mental, physical, social, and spiritual) almost exclusively on suicide prevention. The program also lacks consistency in thorough delivery of training—some bases provide CAF training while others do not. Bases that have documented CAF involvement are from several commands and in different states. There does not seem to be a uniform pattern of who is conducting CAF training. One can only speculate that a decision to have CAF training on base is due to a wing/base commander's exposure to the program through education or a reaction to an incident. Some bases have combined training into existing Wingman Day, Safety Day, and Suicide Prevention training programs.[50]

No evidence exists of *any* Air Force Reserve or Air National Guard units providing CAF training.

Coast Guard. In addition to the main four military branches, the US Coast Guard (although it falls under the Navy during wartime) also has access to Department of Homeland Security (DHS) resiliency training. The Coast Guard recently changed the name of its previous program from DHS Together Resilience Training to Building Resilience and Preventing Suicide in the Coast Guard. This is an annual e-learning training course, again, predominately focused on the prevention of suicide and largely ignoring other symptoms of PTSD.

Reserve components (joint). The Yellow Ribbon Reintegration Program, other than having a presentation from the Psychological Health Program (PHP), is a purely reactive effort that provides financial, relationship, and military benefit information. This information is presented *after* service members return from deployment. It is not preventive in nature except perhaps if a member has returned from deployment and retains information for future deployments.

National Guard. The National Guard Bureau has even joined the fray with its PHP. This program establishes a state director of psychological health (DPH) at each of the 54 joint force headquarters nationwide, as well as a unit DPH at every Army and Air National Guard unit. The PHP "provides National Guard–oriented mental health training throughout the full spectrum of the deployment cycle," including the identification of nonmilitary resources available before and after active-duty military service (civilian status).[51] The state director also works with the Guard and Reserve's Yellow Ribbon Reintegration Program, yet another framework that fits resiliency into its format.

Centralized agencies. Several national and international medical organizations currently have a relationship with the US military: the American Psychiatric Association, American Psychological Association, American Red Cross, National Institute of Mental Health, and VA, among others.[52] One centralized organization, the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE), interacts with the Department of Veterans Affairs and has been involved in response to the mental health and fitness of service members.[53] Congress established the DCoE in November 2007 due to the findings of six congressionally mandated reports.[54] The reports highlighted an immediate need for high-level health care for US service members—regardless of branch, component, status, or geographic location.[55]

The DCoE is comprised of six components: the Center for Deployment Psychology, Center for the Study of Traumatic Stress, Defense and Veterans Brain Injury Center, Deployment Health Clinical Center, National

Center for Telehealth and Technology, and National Intrepid Center for Excellence.[56] Initially, most of its efforts were concentrated on reactive treatments for PTSD and traumatic brain injury (TBI). It was involved with the joint workshop on resilience in September 2010. Despite being technically a nongovernmental organization, the DCoE interacted with the military to address PTSD and TBI. The DOD approved realignment of the DCoE to the US Army in January 2013 under DOD Directive 6000.17E, *Executive Agent (EA) for the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury*.[57] It is unclear why the DOD opted to align the DCoE organization under the Army instead of recognizing its interaction with all branches and establishing it as a centralized organization.

Analysis and Findings

It's fuzzy math.

—George W. Bush
Response to Al Gore
2000 presidential debate

Current and Projected Costs of Treatment and Disability

The growing trend of PTSD and related symptoms has seen small reversals in 2013. Since not much has changed in PTSD treatment, this tentative progress could be an early indication of success with resiliency programs. However, the overall rising rate since 2003, combined with the increased health-care costs, highlights the need for sustained focus on resilience toward PTSD. Initial investment in resiliency programs has been high—nearly $500 million—with the Army and Reserve components alone responsible for more than half of that bill. To put the cost in perspective, military health-care spending (nearly 40 percent of which is for PTSD treatment) soared from about $19 billion in 2000 to more than $50 billion by 2010 and was projected at approximately $65 billion for 2014.[58] Treatment of PTSD is 46 percent of the VA budget, averaging more than $900 million annually.[59] This amount excludes any PTSD treatment related to TBI and does not include partial or full medical disability for PTSD. Experts predict that the upward trend of mental disorder will continue to grow and that continued care for PTSD (at projected levels) is not sustainable.[60] In 2011 the VA treated 476,515 veterans with a primary or secondary diagnosis of PTSD.[61] Figure 2 compares the number of physically wounded Soldiers with those diagnosed with PTSD from 2001 through 2007.

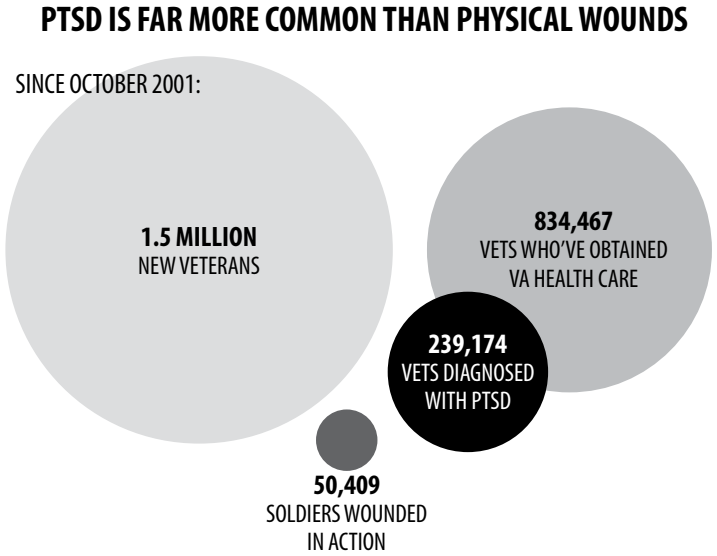


Figure 2. **Number of Soldiers physically wounded versus diagnosed with PTSD (2001–7)**. (Graph sources: Department of Veterans Affairs and DOD. Reproduced from Jaeah Lee, "Charts: Suicide, PTSD and the Psychological Toll on America's Vets; 14 Staggering Stats about the Invisible Wounds of Iraq and Afghanistan," *Mother Jones*, 17 January 2013, http: motherjones.com /politics/2013/01/charts-us-veterans-ptsd-war-iraq-afghanistan.)

PTSD carries more than one form of price tag. As author Richard Gabriel has noted, "Psychiatric breakdown remains one of the most costly items of war when expressed in human terms."[62] A focus on resilience is here to stay. Preventive measures fall in line with Pres. Barack Obama's Patient Protection and Affordable Care Act of 2010 as a key component for the future of national health care.[63]

Programs Not Standardized in Scope, Content, Delivery, or Evaluation

Although the military is beginning to reap the benefits of teaching resilience to service members, a lack of standardization of the various programs remains a problem. Comparison of resiliency programs reveals inconsistencies in training scope, content, delivery, and evaluation of results. Standardization is essential to maximizing the effectiveness of resiliency programs. Despite grasping the importance of providing resiliency training to its members since 2009, the US military has not progressed in organizing systematic or standardized training within or among branches. The military branches and corresponding Guard and Reserve compo-

nents are content to pursue their own resolution to mental health issues caused by PTSD. In today's environment of fiscal limitations, this situation cannot and must not continue.

Scope. Marine Corps, Air Force, and Coast Guard programs have placed more emphasis on *symptoms* of PTSD, such as suicide, and very little focus on PTSD itself as the root issue. In many respects, focusing on symptoms would be like a doctor advocating increasing meals as a preventive measure for patients experiencing sudden weight loss (symptom) from cancer instead of providing information on how to prevent the root problem—cancer itself. Smoking, obesity, depression, suicide, and other mental/physical health issues are often side effects of PTSD known as "comorbidity."[64] The Air Force's CAF program is an example of narrow scope. Most Air Force material presented online or at each base is directed at suicide prevention. The allure of addressing suicides is that the military has kept accurate statistics on suicide rates for decades whereas other PTSD side effects are more difficult to identify and track—such as domestic violence, substance abuse, anger management, and other related symptoms.

Military resiliency programs over the last five years have been developed largely through trial-and-error experimentation. Most similarities among programs have occurred by coincidence, with no attempt at standardization to date despite the CJCS instruction providing guidance four years ago. One can argue that as long as Airmen are trained in the proper techniques for resilience and the results are effective, the rationale is unimportant. However, in the long run, this ends-justify-means attitude is unscientific and counterproductive to *any* training effort.

Content. The Army and Navy have most clearly developed programs that are comprehensive, closest to the Total Force Fitness model, and consistently focused on resiliency specifically to PTSD *and* related symptoms. The Army has targeted resiliency to PTSD as its core focus in training. The Navy has also taken steps to address PTSD through training in coping with stress while deployed and in daily life. Therefore, these two programs were reviewed for content.

Successful methods in training resiliency techniques can be taken directly from college and professional sports organizations' programs. Yogi Berra famously said that professional baseball "is 90 percent mental, and the other half is physical."[65] Many references to sports apply equally well to combat: mental preparation, peak performance, flexibility when the opponent reacts unexpectedly, and full physical and mental recovery to be able to perform again in a very short time period.[66] Current military resiliency programs urge a holistic approach to health—mental, physical,

social, and spiritual. However, they do not adequately address mental *preparedness* for stress in combat and in life.

Delivery methods. Resiliency training is not incorporated into combat or tactical training courses but is taught separately. Much of resiliency training is computer based or occurs in a classroom environment whereas combat training and deployment preparation are almost always hands-on. Eighty-one percent of combat veterans consider training that provides "battle inoculation . . . [to be] 'very important.'"[67]

The US Army has the most fully implemented resiliency program to date. Its program is largely computer based and is required annually. The Army supplements the online CSF2 training with certified master resilience trainers, Soldiers who have attended the US Army Master Resilience School at Fort Jackson, South Carolina. The level 1 course is 10 days long, and the supplemental level 2 course is an additional 5 days.[68] The Army has master resilience trainers placed in each unit, and it has also trained the most service members. Research on the effectiveness of MRT indicates that it positively correlates with an increase in Soldiers' emotional fitness.[69] The most significant result has been an amazing reversal in the suicide trend, which nearly doubled from 2005 to 2010, peaked in 2012, and experienced a dramatic decline of 19 percent in 2013.[70] The Army has conducted the most follow-up research on its program and published findings as to its effectiveness. For these reasons, although still in its infancy, the Army's program should be considered the standard of actual accomplishment.

The Navy teaches its OSC mostly through e-learning and blog-like articles on official web pages to all naval service members and their families. It provides additional training for naval leaders through two classroom-delivered courses. The Navy has also made an effort to embed stress control concepts into *all* existing education and training programs.[71]

Evaluation. Organizational standardization has obvious benefits. Probably the most critical benefit would be to use standardized evaluation metrics to objectively identify which program components work best by comparison. One of the most critical complaints of existing resiliency programs is that after "more than a decade of war, [there is still] a lack of systematic evaluation and performance measures [to gauge the success of resiliency programs]."[72] Standardized evaluation metrics would more accurately identify the impact of training methods. Results could be more quickly compared and communicated. As a 2008 RAND study of resiliency programs recommended, "Each . . . should be evaluated carefully. . . . Only programs that demonstrate effectiveness should be maintained and disseminated."[73]

What little research has been conducted to evaluate program effectiveness has been performed on individual programs, with little or no comparison to other programs to gauge relative effectiveness. Proper evaluation requires the identification of similar methods and results. Attempting to apply metrics to dissimilar programs is like comparing apples to oranges and can skew perspective.

Consolidation of Organizations

While the Army's program may be the most inclusive in content, the Army's and Air National Guard's PHPs have made significant strides in jointness. The National Guard Psychological Health Program oversees both components of the National Guard and ensures standardized format and content. The PHP has also become a part of the Yellow Ribbon Reintegration Program, which is delivered to an even wider range of the Guard and Reserve components of all military branches.

Other than the PHP, the military currently has no centralized oversight of resiliency programs. It does not monitor individual program management of personnel and budgets or evaluate overall program efficiencies. Each program is independently managed and operated, with little or no communication with peers. Programs are funded autonomously, and although the majority of funding comes from the US military, it can come from different sources from US government and nongovernment budgets. Consolidation of program organizations would show improvement in several different areas.

Operations. A centralized organization would reduce costs overall by decreasing operational redundancies and eliminating overlapping staffing and administrative functions. Centralized operations drastically reduce duplication of effort, streamline communication, and aid in assessing and evaluating the effectiveness of programs. Other costs savings can be found in reducing facility lease and/or maintenance expenses. A centralized organization would facilitate training delivery. Instead of risking irregular coverage, training resources could be pooled and directed toward instructing personnel.

The textbook economics term for costs lowering as an organization grows and consolidates is *increased economies of scale*. Economies of scale are essentially cost advantages gained due to expansion. In a conventional business, the average cost per unit falls (to a certain point) as output increases.[74] This strategy is long term because costs sometimes can be briefly driven up during the transition process as a result of disruptions in operation and learning adjustments. A consolidated organization should realize reductions in overhead costs as well as in capital expenditures.[75]

The larger an organization, the more stability it can achieve. Large, stable organizations influence other governmental and nongovernmental agencies and collaborating companies. This advantage is useful when sharing information, garnering assistance on projects, or brokering contracts. Established, centralized organizations have more negotiating power with suppliers. Materials and services acquisition could be centralized, putting the larger organization in a better bargaining position to potentially obtain better rates and services.

Oversight. A centralized organization means centralized management, which, if planned and operated properly, reduces duplication of effort in oversight of personnel, operations, and assets. It streamlines levels of bureaucracy, standardizing and simplifying administration. It provides oversight to all components, ensuring fair and complete distribution to military branches.

Communication. When organizations are consolidated, systems such as communications and information technology (data storage and access) are frequently redesigned and upgraded, making their functions even more efficient. Consolidated communications centers ensure more intraorganization communication as well as communication with customers and peer organizations. Larger voice and data communications systems could be planned for better compatibility, with security and redundancy measures included for preservation and protection of critical information.

Standardizing the existing resiliency programs would immediately begin to recognize cost savings by slowing or stopping existing PTSD rates since the Army's rate is beginning to show signs of effectiveness. Leaving aside potential legal implications, it is impractical for any one branch of the military to shoulder the responsibility of funding and delivering training to the total force. Therefore, an existing centralized organization must be identified or a new one formed for such a purpose. Funding and manpower would be reallocated from individual branches to the central organization.

The current environment of separate programs exhibits not only a lack of communication between organizations but also a potential liability insofar as the end user may receive conflicting messages or treatment. For example, a California national guardsman may receive information from a behavioral health officer that could potentially be substantially different from what his unit's DPH advocates, which could also differ from the information on the CSF2 website. The same member falls under no fewer than three different resiliency programs, which are run separately with no obligation to coordinate or communicate with each other.

Evaluation metrics. Centralized evaluation of all branches would create a research pool double the size of the results of any previous resiliency program study. As any poll would indicate, larger numbers create a lower margin of error for inaccurate or skewed results. Centralized procedures set standards in metrics and evaluation criteria. Common standards identify benchmarks—best practices that can be passed on to achieve desired results in all branches. Research would be shared and compared more quickly by using a common platform to transmit or exchange ideas.

Conclusion

What does not kill me, makes me stronger.

—Friedrich Nietzsche
Twilight of the Idols

Recommendations

Integration of resiliency training into combat/tactical training. Resiliency training addresses life coping skills that may be delivered to service members through computer-based training or in a classroom environment. It also is directly related to PTSD caused by exposure to trauma during combat. Therefore, it makes sense to incorporate training on stress and coping skills as part of combat and tactical training. Combat training and deployment preparation courses should be assessed for inclusion of resiliency training. Combat and tactical training should include conditions that expose service members to stress in a controlled environment. Specific guidance should be given on stress, associated symptoms, and effective coping methods. Integrating resiliency training into combat or tactical training would better prepare deployers for combat-related stress and give them the ability to experience recovery—effective stress inoculation.

Comprehensive scope using the Total Force Fitness framework. Although the military has made strides in implementing PTSD resiliency programs, they lack consistency in content. Some programs are more wide ranging than others. Two of the dozen or so programs specifically address methods to reduce long-term PTSD cases while the rest mostly address selected comorbidity symptoms. Programs should emulate the Total Force Fitness framework, addressing all identified categories in the model (see fig. 3). Training should not only focus on physical or spiritual health but also include mental preparedness. Realistic guidance on what to expect would be helpful to service members preparing to deploy.

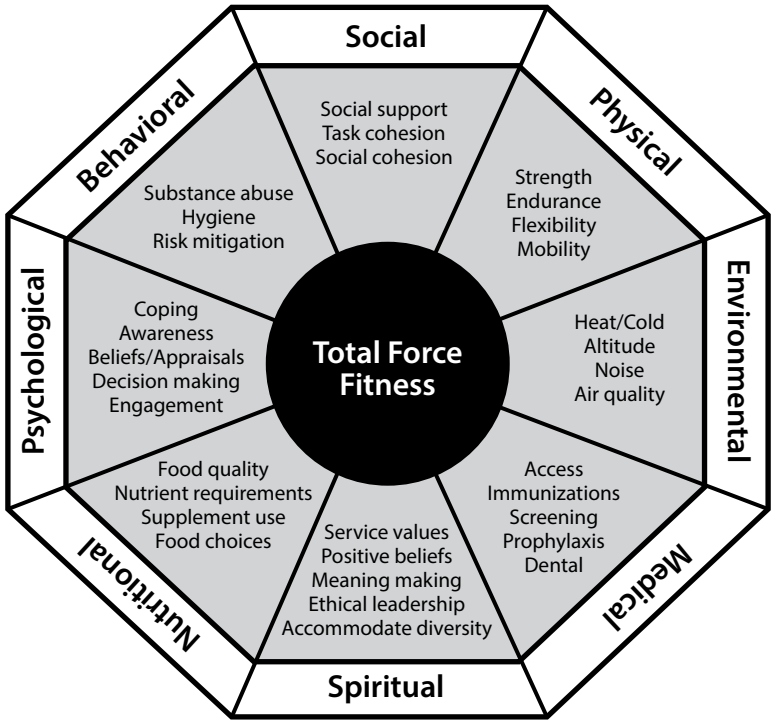


Figure 3. Total Force Fitness model. (Adapted from Chairman of the Joint Chiefs of Staff Instruction 3405.01, *Chairman's Total Force Fitness Framework*, 1 September 2011, A-2.)

Standardization by consolidating organizations under the Defense Centers of Excellence. The US military presently has several resiliency programs that do not have any centralized oversight to provide guidance on focus and content. Although the disparate programs have the same purpose and customer base, they do not communicate and sometimes do not know of each other's existence. Standardization and communication can be best achieved by consolidating organizations. The government should consolidate resiliency programs in order to standardize training and delivery across all branches of the military, generating more complete coverage of service members and best practices from each program based on proven effectiveness.

Existing programs must immediately be evaluated and compared against each other to identify benchmarks—what works well. The other programs must be modified to incorporate the best training and most

cost-effective means of training delivery. Programs must be delivered to *all* units—starting immediately with the branches and units that reflect a higher rate of PTSD and related symptoms, whether due to deployment and combat or not. Therefore, training should concentrate first on those units and then on the other career fields in a wing.

One option—utilizing the existing DCoE as a central organization for program consolidation—would alleviate major startup costs involved with building a new organization. The DCoE has recently been aligned to fall under the US Army. It is already familiar with mental health and fitness of military members, so a new program would experience a more reasonable learning curve than employing a brand new organization or contracting an outside organization for military purposes. The DCoE should be further realigned to fall under the DOD as a whole instead of merely one branch of the military.

Implications

> *An ounce of prevention is worth a pound of cure.*
>
> —Benjamin Franklin

Fiscal implications. Franklin's argument for prevention is as pertinent to the topic at hand today as it was to fighting fires in Philadelphia nearly 300 years ago. Adoption of more preventive methods outlined in the Total Force Fitness framework could save the US military millions of dollars in treatment and disability costs for PTSD and related symptoms per year. Standardization of resiliency programs and integration into a joint or total force program would save even more millions of dollars per year in research, tracking, training delivery, and other administrative costs.

The obstacle at hand is getting all stakeholders—military branches, states, resiliency organizations, unit commanders, and end users—to commit to change. Many of the challenges with consolidating programs are political. Agreeing to give up money and control will be an ordeal. It may also be a struggle to get all participants to agree on the scope and timeline for changing their programs. Part of getting ready for transformation involves preparing against opposition arguments and having a plan in place for projected realignment and/or reductions. Focusing on the end goal is imperative: having a better, more comprehensive program that will produce more prepared service members who will perform more capably in battle and recover quickly and fully afterward.

These separate organizations should cease operating individually managed programs. Instead, they must methodically begin coordinating their efforts at building resilience in service members into a focused common goal. If the Army's results were realized throughout the rest of the military branches, the United States could save between $10–$20 million per year in VA treatment alone and even more in disability payments.

Consolidated organizations and administration would result in even greater cost savings, possibly $100 million per year or more in management, administrative, training, and other operational costs. A few examples of viable administrative cost savings include merging the storage and delivery of training material (whether physical or electronic) and establishing regional training locations for standardized instruction, delivery, and evaluation. The military must combine separate program organizational structures into one joint administrative organization. Doing so would save costs in parallel levels of management and administrative positions while avoiding duplication of effort that may result in conflicting directions. Instead, actions could concentrate on attaining a unified vision/goal.

Operational implications. Planning and executing a strategy to consolidate the various existing resiliency programs under one institute would create a more effective and organized operation. Oversight and management of programs could be made regional instead of by military branch, allowing better visibility and responsiveness. Standardized communication would result in sending and receiving clear, streamlined messages both vertically and horizontally. More effective program management would lower duplication of offices and material. Printed training materials could be designed, ordered, and printed for use among all branches, lowering costs and overhead. Consolidated bases could share certified trainers, providing greater coverage and less unnecessary surplus.

This joint organization would be better suited to implement metrics tracking to compare prior levels of PTSD and related symptoms with current levels to indicate program success or need for modification. Also, the consolidated organization could implement metrics tracking to compare branches to determine the need for adjustment to address a specific requirement in a particular branch. Once needs were identified, the oversight organization would determine levels of funding/focus required per branch. It could adjust the content of the message to match military branch culture while preserving the standardization of intent and methodology (fig. 4). Such oversight would allow assessment of the effectiveness of program modifications and identification of future actions to maximize program efficiencies.

Figure 4. Examples of services' prevention campaigns

Summary

> *People are always talking about standardization, and I don't like the word. There is no such thing. . . . The only constant thing in this world is change.*
>
> —Henry Ford
> *The Quotable Henry Ford*

All branches of the US military are currently attempting to implement resiliency practices without coordinating or standardizing their respective programs. In-house research and statistics give rise to possibly biased findings, and lack of communication has resulted in lost opportunities to improve programs based on valuable lessons learned by other branches.

The rising cost in treatment, together with this growing bill for resiliency programs, is not sustainable. Annual military budgets continue to shrink, and more cuts are inevitable. Such cuts could be unevenly meted out, creating inequality in branches' programs. Distributing cuts evenly across the board would result in program inefficiency.

The US military's philosophy of taking care of service members while ensuring fiscal responsibility demands the aggressive pursuit of minimizing mental trauma to military personnel at a lower cost. Program standardization and consolidation would save fiscal resources and maintain or even increase program effectiveness. Timing is everything, and there is no time like the present. Ten years ago, the military identified the need to further improve its programs in addressing PTSD. For the past six years, the military has concentrated on prevention by developing various resiliency programs. The time to consolidate these programs and standardize methods of training and delivery is *now*.

Notes

(All notes appear in shortened form. For full details, see the appropriate entry in the bibliography.)

1. US Department of Veterans Affairs, "Symptoms of PTSD."
2. Ibid.
3. Williamson and Mulhall, *Invisible Wounds*, 6.
4. Zarembo, "Prevent Psychological Problems."
5. Ghaemi, *First-Rate Madness*, 124; and Herman, *Trauma and Recovery*, 47.
6. *Merriam-Webster*, s.v. "prevention," accessed 1 April 2014, http://www.merriam-webster.com/dictionary/prevention.
7. *Merriam-Webster Medical Dictionary*, s.v. "resilience," accessed 1 April 2014, http://www.merriam-webster.com/medical/resilience.
8. Kobasa, Maddi, and Kahn, "Hardiness and Health," 168–77; and Bonanno, "Loss, Trauma, and Human Resilience," 20–28.
9. Kime, "Panel: Scant Evidence."
10. Sagalyn, "Health Experts Question Army Report."
11. Blakeley and Jansen, *Post-traumatic Stress Disorder*, 27.
12. Johnson, *Who Moved My Cheese?*, 11.
13. Sohn, "Medieval Knights May Have Had PTSD."
14. Friedman, "Past Names for PTSD."
15. Baldwin and Weeks, "Research Brings Hope for Veterans."
16. Engelhard et al., "Vulnerability Associations and Symptoms," 25; and Giordano, "Pain and Psychopathology," 34–42.
17. Stretch, "Follow-Up Studies of Veterans," 457–76.
18. Jones, Hyams, and Wessely, "Screening for Vulnerability," 40–46.
19. Wells, "Group Cohesion and Morale," 61.
20. Archibald and Tuddenham, "Persistent Stress Reaction," 475.
21. Ibid.
22. Jaffe, "New Name for PTSD."
23. Van der Kolk, McFarlane, and Weisaeth, *Traumatic Stress*, 78.

24. Sagalyn, "Changing Name of PTSD."
25. Timm, "PTSD Is Not a Disorder."
26. Maisel, "New Definition."
27. Sagalyn, "Doctor Rejects Name Change."
28. Galea et al., "Trends," 514–24.
29. Miles, "Officials Report Progress," 118.
30. Kirkland, "Postcombat Reentry," 302.
31. Hedges, *Know about War*, 115–16.
32. Spiegel, "Treatment Costs Soar"; and Grossman and Christensen, *On Combat*, 294.
33. Gordon et al., *Enhancing Assessments*, 17–19.
34. Ibid.
35. CJCS Instruction 3405.01, *Chairman's Total Force Fitness Framework*.
36. Borda, "Air Force Resiliency Program," 7.
37. Casey, "Comprehensive Soldier Fitness," 1–3.
38. Reivich, Seligman, and McBride, "Master Resilience Training," 25–34.
39. Lester et al., *Comprehensive Soldier Fitness Program*, 1.
40. Soldz and Eidelson, "Call for Retraction."
41. American Psychiatric Association, *Diagnostic and Statistical Manual*.
42. Chiarelli to leaders and scholars, letter.
43. Joseph, "Client-Centred Therapy," 101; and Calhoun, Tedeschi, and Park, *Posttraumatic Growth*.
44. Lester et al., *Comprehensive Soldier Fitness Program*, 3.
45. Calaway, "Resiliency Training."
46. Torpy, "Spirituality and Spiritual Fitness."
47. US Marine Corps, "(MCFIT) Commander's Guide," 4.
48. Caplan, *Johnny and Jane*, 120.
49. Operational Stress Control, "What's Next?"
50. Hubenthal, "Building Resilience."
51. National Guard Bureau, Psychological Health Program website, "Program Goals."
52. US Department of Veterans Affairs, "PTSD."
53. Defense Centers of Excellence (DCoE) for Psychological Health and Traumatic Brain Injury, official website, 2014.
54. DCoE, *Annual Report 2012*, 9.
55. DCoE, *Annual Report 2009*, 9.
56. Ibid., 38.
57. DCoE, *Annual Report 2012*, 15.
58. Keifer, "Admiral Mike Mullen."
59. Congressional Budget Office, *Treatment of PTSD*, 18, 20.
60. Dunn, "Experts: PTSD Growing Issue"; and Keifer, "Admiral Mike Mullen."
61. US Department of Veterans Affairs, "VA PTSD Program Quick Facts."
62. Gabriel, *No More Heroes*.
63. White House, "Affordable Care Act," 1–11.
64. "309.81: Posttraumatic Stress Disorder (PTSD)," in American Psychiatric Association, *Diagnostic and Statistical Manual*.
65. Asken, Grossman, and Christensen, *Warrior Mindset*, 23.
66. Ibid., 42.
67. Holmes, *Acts of War*, 53.
68. "U.S. Army Master Resilience School."
69. Lester et al., *Comprehensive Soldier Fitness Program*, 15.

70. Zarembo, "Programs to Prevent Psychological Problems"; Briggs, "Military Suicide Rate"; and Zoroya, *"Suicides in the Army."*
71. Cragg, "Navy Program."
72. Denning, Meisners, and Warner, *Preventing Psychological Disorders*.
73. Tanielian and Jaycox, *Invisible Wounds of War*, 452.
74. Sullivan and Sheffrin, *Economics*, 157.
75. Nordmeyer, "Benefits of Organizational Consolidation?"

Appendix

Military Resiliency Programs as of 2014

Branch	*Program Title*	*Program Information*
Army	Comprehensive Soldier and Family Fitness (CSF2) 	*Primary focus*: Post-traumatic stress disorder (PTSD) and related symptoms *Website*: http://csf2.army.mil/ *Start-up year*: 2009
Air Force	Comprehensive Airman Fitness (CAF) 	*Primary focus*: Suicide prevention *Website*: No central website available *Start-up year*: 2010
Navy	Operational Stress Control (OSC) 	*Primary focus*: Stress continuum and stress management *Website*: http://navynavstress.com/ *Start-up year*: 2009
Marine Corps	Behavioral Health Information Network 	*Primary focus*: Community counseling and suicide prevention *Website*: http://bhin.usmc-mccs.org/ (no longer available to the public) *Start-up year*: 2010

Branch	*Program Title*	*Program Information*
Marine Corps	Combat Operational Stress Control (COSC) 	*Primary focus*: Spiritual health (Chaplain Corps) and PTSD continuum *Website*: http://www.med.navy.mil/sites/nmcsd/nccosc/Pages/welcome.aspx *Start-up year*: 2011
Marine Corps	Operational Stress Control and Readiness (OSCAR) Teams 	*Primary focus*: Mental health professional peer-to-peer support / "Stress First-Aid" *Website*: No central website available *Information website:* http://www.med.navy.mil/bumed/comms/MEDNEWS/Pages/OperationalStressControlandReadiness.aspx *Start-up year*: 2012
Marine Corps	Research, Assessment, Performance, Training Optimization and Resilience (RAPTOR)	*Primary focus*: Resiliency research program *Website*: No central website available *Information website:* http://www.imef.marines.mil/News/NewsArticleDisplay/tabid/3963/Article/534868/resiliency-training-raptor-program-prepares-deploying-marines.aspx *Start-up year*: 2011
Coast Guard	DHS Together Employee and Organizational Resilience	*Primary focus*: Organizational resilience, particularly to workplace violence *Website*: http://www.dhs.gov/dhstogether-employee-and-organizational-resilience *Start-up year*: 2010

Branch	***Program Title***	***Program Information***
Coast Guard	Building Resilience and Preventing Suicide in the Coast Guard	*Primary focus*: Suicide prevention *Website*: No central website available *Information website:* http://www.uscg.mil/d7/sectJacksonville/training/MANDATED%20TRAINING%20LIST%20UPDATED%2020 20MAR13.pdf *Start-up year*: 2013
Army / Air Guard	Psychological Health Program (PHP) PSYCHOLOGICAL HEALTH PROGRAM NATIONAL GUARD BUREAU	*Primary focus*: Mental health support ("five pillars of wellness") *Website*: https://www.jointservicessupport.org/php/ *Start-up year*: 2010
Air Force / Marine Corps	Deployment Transition Center Ramstein AFB, Germany COMBAT BRIDGE AF DEPLOYMENT TRANSITION CENTER	*Primary focus*: Reintegration program *Website*: http://www.ramstein.af.mil/deploymenttransitioncenter.asp *Start-up year*: 2010
Joint Reserve Services	Yellow Ribbon Reintegration Program YELLOW RIBBON REINTEGRATION PROGRAM	*Primary focus*: Reintegration program; later, inclusion of PHP *Websites*: http://www.yellowribbon.mil/ https://www.jointservicessupport.org/yrrp/Default.aspx *Information website*: http://www.militaryonesource.mil/deployment?content_id=266643 *Start-up year*: 2008

Branch	***Program Title***	***Program Information***
Army / Air National Guard: Indiana California Michigan Georgia	Behavioral Health Services (Star Behavioral Health Providers) STAR BEHAVIORAL HEALTH PROVIDERS Civilian Professionals. *Military Sensitivity.*	*Primary focus*: Understanding and treating military members; *mostly reactive* *Websites*: http://starproviders.org/providers/states/indiana/collaborators-page-id-5 http://www.calguard.ca.gov/BH *Start-up year:* 2011
Department of Defense	Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE)	*Primary focus*: Reintegration program; later, inclusion of PHP *Websites*: http://www.dcoe.mil *Start-up year*: 2007
Joint Chiefs of Staff	Total Force Fitness Framework	*Primary focus*: Standardized resiliency structure *Websites*: No central website available *Start-up year*: 2010

Abbreviations

CAF	Comprehensive Airman Fitness
CJCS	chairman of the Joint Chiefs of Staff
COSC	Combat Operational Stress Control
CSF2	Comprehensive Soldier and Family Fitness
CSR	combat stress reaction
DCoE	Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury
DHS	Department of Homeland Security
DOD	Department of Defense
DPH	director of psychological health
DPL-OSC	Deckplate Leader OSC
DSM	*Diagnostic and Statistical Manual of Mental Disorders*
FOCUS	Families OverComing under Stress
MCFIT	Marine Corps Fitness Improvement Tool
MRT	Master Resilience Training
NAV-OSC Lead	Navy OSC for Leaders
OSC	Operational Stress Control
OSCAR	Operational Stress Control and Resiliency
PHP	Psychological Health Program
PTSD	post-traumatic stress disorder
RAPTOR	Research, Assessment, Performance, Training Optimization, and Resilience
TBI	traumatic brain injury
VA	Veterans Affairs

Bibliography

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Arlington, VA: American Psychiatric Publishing, 2013.

Archibald, Herbert C., and Read D. Tuddenham. "Persistent Stress Reaction after Combat: A 20-Year Follow-Up." *Archives of General Psychiatry* 12, no. 5 (1965): 475–81.

Asken, Michael J., Dave Grossman, and Loren W. Christensen. *Warrior Mindset: Mental Toughness Skills for a Nation's Defenders—Performance Psychology Applied to Combat*. New York: Human Factor Research Group, 2012.

Baldwin, Elaine, and Marilyn Weeks. "Research Brings Hope for Veterans and Millions of Other Americans Who Suffer from Post-traumatic Stress Disorder." News release. National Institutes of Health / National Institute of Mental Health, 10 November 1997. http://www.nih.gov/news/pr/nov97/nimh-10.htm.

Blakeley, Katherine, and Don J. Jansen. *Post-traumatic Stress Disorder and Other Mental Health Problems in the Military: Oversight Issues for Congress*. Washington, DC: Congressional Research Service, 2013. https://www.fas.org/sgp/crs/natsec/R43175.pdf.

Bonanno, George. A. "Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive after Extremely Aversive Events?" *American Psychologist* 59, no. 1 (January 2004): 20–28. http://www.public.asu.edu/~iacmao/PGS191/Resilience%20Reading%20%231A.pdf.

Borda, Brian. "Air Force Resiliency Program Overview." Presentation. 2011 Military Health System Conference. National Harbor, MD, 24 January 2011. http://www.dtic.mil/dtic/tr/fulltext/u2/a556241.pdf.

Briggs, Bill. "Military Suicide Rate Hit Record High in 2012." *NBCnews.com*, 14 January 2013. http://usnews.nbcnews.com/_news/2013/01/14/16510852-military-suicide-rate-hit-record-high-in-2012?lite.

Calaway, Jenn. "Resiliency Training, RAPTOR Program Prepares Deploying Marines." US Marine Corps website, 17 March 2011. http://www.imef.marines.mil/News/NewsArticleDisplay/tabid/3963/Article/534868/.

Calhoun, Lawrence G., Richard G. Tedeschi, and Crystal L. Park. *Post-traumatic Growth: Positive Changes in the Aftermath of Crisis*. Mahwah, NJ: Lawrence Erlbaum, 1998.

Caplan, Paula J. *When Johnny and Jane Come Marching Home: How All of Us Can Help Veterans*. Cambridge, MA: MIT Press, 2011.

Casey, George W., Jr. "Comprehensive Soldier Fitness: A Vision for Psychological Resilience in the U.S. Army." *American Psychologist* 66, no. 1 (January 2011): 1–3.

Chairman of the Joint Chiefs of Staff Instruction 3405.01. *Chairman's Total Force Fitness Framework*, 1 September 2011.

Chiarelli, Peter W., Department of the Army, Office of the Vice Chief of Staff. To leaders and scholars. Letter, December 2011. http://www.ppc.sas.upenn.edu/csftechreport3mrt.pdf.

Congressional Budget Office (CBO). *The Veterans Health Administration's Treatment of PTSD and Traumatic Brain Injury among Recent Combat Veterans*. Washington, DC: CBO Press, 9 February 2012. http://www.cbo.gov/sites/default/files/cbofiles/attachments/02-09-PTSD.pdf.

Cragg, Jennifer. "Navy Program Increases Operational Stress Awareness." DoD News, 2 December 2010. http://www.defense.gov/news/newsarticle.aspx?id=61919.

Defense Centers of Excellence (DCoE) for Psychological Health and Traumatic Brain Injury. *Annual Report 2009*. Silver Spring, MD: DCoE Press, 2009.

———. *Annual Report 2012*. Silver Spring, MD: DCoE Press, 2012.

———. Official website. Accessed January 2014. http://www.dcoe.mil.

Denning, Laura Aluppa, Marc Meisners, and Kenneth E. Warner, eds. *Preventing Psychological Disorders in Service Members and Their Families: An Assessment of Programs*. Washington, DC: Institute of Medicine of the National Academies, National Academies Press, 2014.

Dunn, Mike. "Experts: PTSD Growing Issue among Veterans, Social Service Agencies." CBS Philly news website, 19 January 2013. http://philadelphia.cbslocal.com/2013/01/19/experts-ptsd-growing-issue-among-veterans-social-service-agencies/.

Engelhard Iris M., Jorg Huijding, Marcel A. Van den Hout, and Peter J. De Jong. "Vulnerability Associations and Symptoms of Post-traumatic Stress Disorder in Soldiers Deployed to Iraq." *Behaviour Research and Therapy* 45, no. 10 (October 2007): 2317–25.

Fischer, Hannah. *A Guide to U.S. Military Casualty Statistics: Operation New Dawn, Operation Iraqi Freedom, and Operation Enduring Freedom*. Washington, DC: Congressional Research Service, 2014.

Frankl, Viktor. *Man's Search for Meaning: An Introduction to Legotherapy*. 4th ed. Boston: Beacon Press, 1992.

Franklin, Benjamin. "Protection of Towns from Fire." *Pennsylvania Gazette*, 4 February 1735.

Friedman, Matthew. "'Soldier's Heart' and 'Shell Shock': Past Names for PTSD." *PBS*, 1 March 2005. http://www.ptsd.ne.gov/what-is-ptsd.html.

Gabriel, Richard A. *No More Heroes: Madness and Psychiatry in War*. New York: Hill and Wang, 1987.

Galea, Sandro, David Vlahov, Heidi Resnick, Jennifer Ahern, Susser Ezra, Joel Gold, Michael Bucuvalas, and Dean Kilpatrick. "Trends of Probably Post-traumatic Stress Disorder in New York City after the September 11 Terrorist Attacks." *American Journal of Epidemiology* 158, no. 6 (September 2003): 514–24.

Ghaemi, Nassir. *A First-Rate Madness: Uncovering the Links between Leadership and Mental Illness*. New York: Penguin Press, 2011.

Giordano, Walter J. "Pain and Psychopathology in Military Wounded: How Etiology, Epidemiology Sustain an Ethics of Treatment." *Practical Pain Management* 7, no. 6 (2007): 34–42.

Gordon, C. Vance, G. James Herrera, R. Royce Kneece, Drew Miller, and Edward P. Wyatt. *Enhancing Assessments of Mental Health Programs and Program Planning*. Alexandria, VA: Institute for Defense Analyses, 2012.

Grossman, Dave. *On Killing: The Psychological Cost of Learning to Kill in War and Society*. New York: Back Bay Books / Little, Brown, 1996.

Grossman, Dave, and Loren W. Christensen. *On Combat: The Psychology and Physiology of Deadly Conflict in War and Peace*, 3rd ed. New York: Human Factor Research Group, 2012.

Hedges, Chris. *What Every Person Should Know about War*. New York: Free Press, 2003.

Herman, Judith. *Trauma and Recovery: The Aftermath of Violence—from Domestic Abuse to Political Terror*. New York: Basic Books, 1997.

Holmes, Richard. *Acts of War: Behavior of Men in Battle*. New York: Free Press, 1985.

House. *Current Status of Suicide Prevention Programs in the Military: Hearing before the Subcommittee on Military Personnel of the Committee on Armed Services*. H.A.S.C. (House Armed Services Committee) no. 112-62. 112th Cong., 1st sess., 9 September 2011. Washington, DC: Government Printing Office, 2012.

Hubenthal, Christopher. "Building Resilience through Comprehensive Airman Fitness." 99th Air Base Wing Public Affairs. Nellis AFB, NV, 4 September 2013. http://www.nellis.af.mil/news/story.asp?id=123362044.

Jaffe, Greg. "New Name for PTSD Could Mean Less Stigma." *Washington Post*, 5 May 2012. https://www.washingtonpost.com/world/national-security/new-name-for-ptsd-could-mean-less-stigma/2012/05/05/gIQAlV8M4T_story.html.

Johnson, Spencer. *Who Moved My Cheese? An Amazing Way to Deal with Change in Your Work and in Your Life*. New York: Penguin Putnam, 2002.

Jones, E., K. C. Hyams, and S. Wessely. "Screening for Vulnerability to Psychological Disorders in the Military: An Historical Study." *Journal of Medical Screening* 10, no. 1 (2003): 40–46.

Joseph, Stephen. "Client-Centred Therapy, Post-traumatic Stress Disorder and Post-traumatic Growth: Theoretical Perspectives and Practical Implications." *Psychology and Psychotherapy: Theory, Research and Practice* 77, no. 1 (March 2004): 101–19.

———. *What Doesn't Kill Us: The New Psychology of Posttraumatic Growth*. New York: Basic Books, 2012.

Keifer, Francine. "Admiral Mike Mullen: Cost of Military Healthcare Is 'Not Sustainable.'" *Christian Science Monitor* (blog), 29 September 2010. http://www.csmonitor.com/commentary/editorial-board-blog/2010/0929/admiral-mike-mullen-cost-of-military-health-care-is-not-sustainable.

Kime, Patricia. "Panel: Scant Evidence 'Resiliency' Programs Really Work." *Army Times*, 20 February 2014. http://www.armytimes.com/article/20140220/NEWS/302200030/Panel-Scant-evidence-resiliency-programs-really-work.

Kirkland, Faris R. "Postcombat Reentry." In Zajtchuk, *War Psychiatry*, 291–317.

Kobasa, S. C., S. R. Maddi, and S. Kahn. "Hardiness and Health: A Prospective Study." *Journal of Personality and Social Psychology* 42, no. 1 (1982): 168–77.

Lester, Paul B., P. D. Harms, Mitchel Norman Herian, Dina V. Krasikova, and Sarah J. Beal. *The Comprehensive Soldier Fitness Program Evaluation: Report #3; Longitudinal Analysis of the Impact of Master Resilience Training on Self-Reported Resilience and Psychological Health Data*. Washington, DC: Pentagon, December 2011.

Maisel, Eric R. "Rethinking Mental Health: The New Definition of a Mental Disorder." *Psychology Today* (blog), 23 July 2013. http://www.psychologytoday.com/blog/rethinking-psychology/201307/the-new-definition-mental-disorder.

Marshall, Samuel Lyman Atwood. *Men against Fire: The Problem of Battle Command*. Norman: University of Oklahoma Press, 2000.

Miles, Donna. "Officials Report Progress, Challenges in Treating Combat Stress." Armed Forces Information Service, 28 July 2005.

National Guard Bureau. Psychological Health Program website. Accessed 1 April 2014. https://www.jointservicessupport.org/PHP/About.aspx.

Nietzsche, Friedrich. *Twilight of the Idols and the Anti-Christ*. New York: Penguin Putnam, 1990.
Nordmeyer, Billie. "What Are the Benefits of Organizational Consolidation?" *Houston Chronicle*. Accessed 1 February 2014. http://smallbusiness.chron.com/benefits-organizational-consolidation-45360.html.
"One in Five Iraq and Afghanistan Veterans Suffer from PTSD or Major Depression." RAND. News release, 17 April 2008. http://www.rand.org/news/press/2008/04/17.html.
Operational Stress Control. "What's Next? Navigating Transitions, Pt. 3." *NavyNavStress* (blog), 26 March 2014. https://navstress.wordpress.com/2014/03/26/whats-next-navigating-transitions-pt-3/.
Reivich, Karen J., and Andrew Shatté. *The Resilience Factor: 7 Keys to Finding Your Inner Strength and Overcoming Life's Hurdles*. New York: Broadway Books, 2002.
Reivich, Karen J., Martin E. P. Seligman, and Sharon McBride. "Master Resilience Training in the U.S. Army." *American Psychologist* 66, no. 1 (January 2011): 25–34.
Ricks, Markeshia. " 'Resiliency' Efforts Run Up against Busy AF." *Air Force Times*, 4 May 2012. http://www.airforcetimes.com/article/20120504/NEWS/205040315/-8216-Resiliency-efforts-run-up-against-busy-AF.
Sagalyn, Daniel. "Army General Calls for Changing Name of PTSD." *PBS*, 4 November 2011. http://www.pbs.org/newshour/updates/military-july-dec11-stress_11-04/.
———. "Health Experts Question Army Report on Psychological Training." *PBS*, 2 January 2012. http://www.pbs.org/newshour/updates/military-jan-june12-csf_training_01-02/.
———. "Key Psychiatric Doctor Rejects Name Change for PTSD." *PBS*, 10 May 2012. http://www.pbs.org/newshour/rundown/key-psychiatric-doctor-rejects-name-change-for-ptsd/.
Siddle, Bruce K. *Sharpening the Warrior's Edge: The Psychology and Science of Training*. Millstadt, IL: PPCT Management Systems, 1995.
Sohn, Emily. "Medieval Knights May Have Had PTSD." *Discovery*, 20 December 2011. http://news.discovery.com/history/archaeology/medieval-knights-ptsd-111220.htm/.
Soldz, Stephen, and Roy Eidelson. "A Call for Retraction: The Army's Flawed Resilience-Training Study." *CounterPunch*, 4 June 2012. http://www.counterpunch.org/2012/06/04/the-armys-flawed-resilience-training-study/.
Spiegel, Alix. "Post-traumatic Stress Treatment Costs Soar." *npr*, 31 May 2006. http://www.npr.org/templates/story/story.php?storyId=5441927.
Stretch, Robert H. "Follow-Up Studies of Veterans." In Zajtchuk, *War Psychiatry*, 457–72.

Sullivan, Arthur, and Steven M. Sheffrin. *Economics: Principles in Action*. Upper Saddle River, NJ: Pearson Prentice Hall, 2003.

Tanielian, Terri, and Lisa H. Jaycox, eds. *Invisible Wounds of War*: *Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery*. Santa Monica, CA: RAND, 2008.

Timm, Jane C. "PTSD Is Not a Disorder, Says Medal of Honor Winner." *MSNBC*, 25 September 2013. http://www.msnbc.com/morning-joe/ptsd-not-disorder-says-medal-honor.

Torpy, Jason. "Spirituality and Spiritual Fitness: Military Spiritual Fitness Overview." Military Association of Atheists and Freethinkers. Accessed September 2013. http://militaryatheists.org/advocacy/spirituality/.

"U.S. Army Master Resilience School: Strength through Resilience." Fort Jackson website. Accessed March 2014. http://www.jackson.army.mil/sites/school/pages/273.

US Department of Veterans Affairs. "PTSD: National Center for PTSD—Professional." Accessed January 2014. http://www.ptsd.va.gov/professional/web-resources/trauma-web-resources.asp.

———. "Symptoms of PTSD." National Center for PTSD. Accessed January 2014. http://www.ptsd.va.gov/PTSD/public/PTSD-overview/basics/symptoms _of_ptsd.asp.

———. "VA PTSD Program Quick Facts." Office of Public and Intergovernmental Affairs. Accessed January 2014. http://www.va.gov/opa/issues/ptsd.asp.

US Marine Corps. "Marine Corps Fitness Improvement Tool (MCFIT) Commander's Guide." Accessed 7 August 2015. http://www.bhin.usmc-mccs.org/MCFIT/docs/MCFIT Commanders Guide V2.pdf.

Van der Kolk, Bessel A., Alexander C. McFarlane, and Lars Weisaeth, eds. *Traumatic Stress: The Effects of Overwhelming Experience on Mind, Body, and Society*. New York: Guilford Press, 2007.

Wehrwein Albion, Michele. *The Quotable Henry Ford*. Gainesville: University Press of Florida, 2013.

Wells, Mark K. "Combat Stress, Emotional Breakdown and their Treatment in the Allied Air Forces." Chap. 3 in *Courage and Air Warfare: The Allied Aircrew Experience in the Second World War*. Portland, OR: Frank Cass, 1995.

White House. "The Affordable Care Act and Trends in Health Care Spending." Fact sheet, 2013. http://www.whitehouse.gov/sites/default/files/docs/fact_sheet_implementing_the_affordable_care_act_from_the_erp_2013_final1.pdf.

Williamson, Vanessa, and Erin Mulhall. *Invisible Wounds: Psychological and Neurological Injuries Confront a New Generation of Veterans*.

New York: Iraq and Afghanistan Veterans of America, January 2009. http://iava.org/research-reports/.
Zajtchuk, Brig Gen Russ, Medical Corps, US Army, editor in chief. *War Psychiatry*. Falls Church, VA: Office of the Surgeon General, 1995.
Zarembo, Alan. "Programs to Prevent Psychological Problems in Troops Questioned." *Los Angeles Times*, 20 February 2014. http://www.latimes.com/science/sciencenow/la-sci-sn-preventing-psychological-problems-in-military-iom-20140220,0,3260790.story #axzz2v3bph8Bt.
Zoroya, Gregg. "Suicides in the Army Decline Sharply." *USA Today*, 31 January 2014. http://www.usatoday.com/story/news/nation/2014/01/31/suicide—military—army—numbers—decline/5057337/.

AFRI AU PRESS
AIR FORCE RESEARCH INSTITUTE
http://aupress.au.af.mil